Grade 6 Unpacked Math Standards - Algebra

6.A.1.1. Students are able to **use** order of operations, excluding nested parentheses and exponents, to **simplify** whole number expressions.

Webb Level: 2
Bloom: Application

Verbs Defined:
Use: apply
Simplify: calculate the value of

Key Terms Defined:
Order of operations: parentheses multiply/divide from left to right; add/subtract from left to right
Nested parentheses: grouping symbols within group symbols
Exponents: number that indicates how many times the base is used as a factor
Whole number expressions: a combination of numbers (0, 1, 2, 3…) and operations

Teacher Speak:
Students are able to use (apply) order of operations, excluding nested parentheses and exponents to simplify (calculate the value of) whole number expressions and operations.

Students are able to apply order of operations, excluding nested parentheses and exponents to calculate the value of whole number expressions.

Student Speak:
I can use the order of operations (parentheses, multiply/divide from left to right, add/subtract from left to right) to calculate the value of a whole number (0, 1, 2, 3,..) expression.

6.A.1.2. Students are able to **write** algebraic expressions involving addition or multiplication using whole numbers.

Webb Level: 1
Bloom: Application

Verbs Defined:
Write: write

Key Terms Defined:
Algebraic expressions: a combination of numbers, variables and operations

Whole numbers: counting numbers and 0 (0, 1, 2, 3…)
Multiplication symbols: 2•3, 2(3), 2n

Teacher Speak:
Students are able to write algebraic expressions involving addition or multiplication using whole numbers.

Student Speak:
From words:
* I can write a combination of numbers, variables and operations (algebraic expressions) involving addition using whole numbers (0, 1, 2,..).

*I can write a combination of numbers, variables and operations (algebraic expressions) involving 2•3, 2(3), 2n (multiplication) using whole numbers (0, 1, 2,…).

6.A.2.1. Students are able to **write** and **solve** one-step 1st degree equations, with one variable, involving inverse operations using the set of whole numbers.

Webb Level: 2
Bloom: Application

Verbs Defined:
Write: translate words to mathematical symbols
Solve: to find the solution

Key Terms Defined:
1st degree: an expression with a variable(s) to the 1st power (linear).
Variable: a letter or symbol used to represent a number
Inverse operations: operations that undo each other (addition and subtraction undo each other, multiplication and division undo each other)
Whole numbers: counting numbers and 0 (0, 1, 2, …)

Teacher Speak:
Students are able to write (translate words into mathematical symbols) and solve (find the solution) of one-step 1st degree equations, with one variable, involving inverse operations using the set of whole numbers.

Student Speak:
I can
* translate (write) words into equations.
*find the solution (solve) for one-step equations involving whole numbers (0, 1, 2, …) using operations that undo each other (inverse operations).

6.A.3.1. Students are able to **identify** and **graph** ordered pairs in Quadrant I on a coordinate plane.

Webb level: 1
Bloom: Knowledge

Verbs Defined:
Identify: name the coordinates of a given point
Graph: plot a point

Key terms defined:
Coordinate plane: plane formed by 2 perpendicular number lines that intersect at their 0 points
Ordered pair: a pair of numbers that gives the location of a point in a coordinate plane (x, y)
Quadrant I: upper right quarter of the coordinate plane (x and y are both positive)

Teacher Speak
Students are able to identify (name the coordinates of a given point) and graph (plot the point) ordered pairs in Quadrant I on a coordinate plane.

Student Speak
I can name the coordinates of a given point (ordered pair) in Quadrant I of the coordinate plane.

Given the coordinates of a given point (ordered pair), I can plot the point (graph in Quadrant I of the coordinate plane.

6.A.3.2. Students are able to **solve** one-step problems involving ratios and rates.

Webb level: 1
Bloom: Application

Verbs Defined:
Solve: find a solution

Key terms defined:
One-step problems: problems that use one operation
Ratios: comparison of two quantities by division
Rates: a ratio of two quantities measured in different units

Teacher Speak:
Students are able to solve (find a solution) for one-step problems involving ratios and rates**.**

Student Speak:
I can
*find a solution (solve) for problems using one operation (one-step) involving ratios
*find a solution (solve) for problems using one operation (one-step) involving rates
*find a unit rate (rate with a denominator of one).

6.A.4.1. Students are able to **use** concrete materials, graphs and algebraic statements to **represent** problem situations.

Webb level: 2/3
Bloom: Comprehension

Verbs Defined:
Use: manipulate
Represent: draw/write/identify

Key terms defined:
Concrete materials: objects that can be manipulated
Graphs: scatterplot (two sets of data plotted as ordered pairs in the coordinate plane)
Algebraic statements (expression): combination of numbers, variables and operations
Problem situation: word problems

Teacher Speak:
Students are able to use (manipulate) concrete materials, write and identify scatterplots, and write algebraic statements to model word problems.

Student Speak:
I can find the answer to word problems (problem situations) by:
* using hands-on materials (concrete materials)
* drawing and looking at two sets of data plotted as ordered pairs in the coordinate plane (scatterplots graphs)
* writing a combination of numbers, letters (variables) and +, - , •, ÷ (operations)(algebraic statement).

I can find the answer to word problems (problem situations) by:
* using hands-on materials (concrete materials)
* drawing and looking at a graph (scatterplot)
* writing an algebraic expression (statement)